

Poster presentation

New lumbar Lordosing orthosis for degenerative lumbar conditions: clinical and experimental tests

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Background

The need to limit discovertebral constraints without restricting the patient's everyday activities during episodes of lumbar pain has led to the production of a standard model brace. The brace's design and functions target sagittal balance through trunk reposition, spinal flexion reduction, and lordosis maintenance without putting pressure on the posterior joints. The 4 clinical and experimental studies presented below confirm the importance of this orthosis.

Clinical test 1 objective

The first objective is to evaluate the effects of wearing a LORDACTIV orthosis during pain experienced by patients suffering from degenerative lumbar conditions.

Methods

113 patients suffering from lumbago were fitted with a corset (56 women and 57 men) with an average age of 42 years, presenting on average with 8 months of persistent lumbar pain or radiculitis (intensity 7.3/10 on the Visual Analog Scale). Simple X-rays and an MRI allowed the following to be distinguished: discopathy (black appearance in T2 for discs L4L5 and/or L5S1), 44 cases, average age 38 years; inflammatory disc degeneration (MODIC 1) 21 cases, average age 50 years; disc hernia, 33 cases, average age 42 years; spondylolisthesis, 15 cases, average age 44 years. The corset was worn 8 hours per day for 4 weeks,

and no sick leave was given. Pain evaluation was assessed with the Visual Analog Scale.

Results

The VAS average result after 4 weeks was 1.5/10, representing a pain reduction of 80%. The patients judged this result 'good' or 'very good' in 78% of cases. Regarding the different conditions studied, the greatest VAS reduction was for spondylolisthesis (7.3), followed by discopathy (6.5), MODIC discopathy (5.2), and finally disc hernias (5).

Conclusion

This study demonstrates the effectiveness of the LORDACTIV orthosis for pain reduction in cases of degenerative lumbar conditions.

Clinical test 2 objective

The second objective is to compare spinal extension and flexion in patients wearing LORDACTIV, a conventional lumbar support belt, and no orthosis.

Methods

Rachimetric tests were performed on 39 patients suffering from lumbar pain divided equally between disc herniation (DH), spondylolisthesis by isthmic lysis (SPD), discopathy (DISCO), degenerative discopathy (MODIC 1), and mechanical sacroiliac conditions (SI). Patients

wore either the LORDACTIV orthosis or a traditional orthosis. In the experimental procedure, 6 patients suffering from lumbar pain with discopathy (normal or inflammatory) had to stand on a force platform with their eyes closed (hands by their sides) minimizing their movements, with or without an orthosis.

Results

The results show that restriction in spinal column flexion is only significant with lordosis (63% for degenerative lumbar conditions) compared to traditional boned belts, which even facilitate flexion in the case of spondylolisthesis. For patients standing on the platform, the reduction of movement of the center of gravity demonstrates a reduction in body movements in patients wearing the LORDACTIV brace. The correction initiation time is shorter with LORDACTIV (the time lapse from the moment the subject moves away from the reference position before correcting their posture) compared with the flexible belt. This means that patients in the LORDACTIV brace correct disruptions in balance more quickly.

Conclusion

These results show the importance of the LORDACTIV® orthosis in stabilizing the posture of patients suffering from lumbar pain compared to a traditional support belt. The patient's balance strategy is improved, which could be at the origin of spinal stabilization, passive structure relief (intervertebral discs, ligaments, joints), therefore having an analgesic effect.

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